South Tobacco Roots Watershed Assessment

Executive Summary and Authorized Officer's Determination

Ruby Mountains Wilderness Study Area, August 2006

Bureau of Land Management
Dillon Field Office
1005 Selway Drive
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(406) 683-8000
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This document summarizes the findings of the South Tobacco Roots Watershed Assessment conducted during the 2006 field season. The assessment area covers approximately 33,600 acres of public land administered by the Bureau of Land Management (BLM) in Madison County, Montana. The watershed includes thirty grazing allotments and nearly 1,200 acres of un-alloted land in the Ruby Mountain Wilderness Study Area (WSA).

The table below summarizes the determination of rangeland health standards by allotment. It also briefly describes resource concerns identified by the interdisciplinary team (IDT) and preliminary recommendations to mitigate these concerns and revise management where deemed necessary.

The BLM is currently working on National Environmental Policy Act (NEPA) documentation. The NEPA document will include all BLM-administered public lands covered in the South Tobacco Roots Assessment. Alternative management will be analyzed wherever it is determined that allotments are not meeting the Standards, allotments are meeting the Standards but have site specific resource concerns, there are large noxious weed infestations, unhealthy forest conditions, and fuels conditions outside the natural range of variability.

Allotment Name Number Category & BLM acres	**Are Healthy Rangelands Standards Being Met?**					**Primary Resource Concerns (including discernable cause of resource concern)**	**ID Team Initial Recommendations**
	Upland	Riparian Wetland	Water Quality	Air Quality	Bio-diversity		
Baker Summit 10487 (C) Acres: 428	Yes	N/A	Yes	Yes	**No**[1]	1. Conifer encroachment in the uplands and riparian areas, forest health (insects and/or disease) and excessive fuels loads	1. Prescribed fire, mechanical treatments, timber sales or other means to mitigate conifer encroachment and fuel loads in the uplands and riparian areas.
Ballard #10456 (I) Acres: 1,022	Yes	Yes	**No**	Yes	**No**[1]	1. See # 1 above; Forest Health FAR ↓ 2. Mill Gulch is on the Montana DEQ 303 (d) list of impaired streams.	1. See # 1 above 2. Continue working with Montana DEQ and local Watershed Committees in the development and implementation of water quality restoration plans.
Benchmark #20489 (M) Acres: 901	Yes	**No**	Yes	Yes	**No**[1]	1. See # 1 above 2. Streambank impacts and vegetative composition in riparian habitat along streams RU 200, 201, 198, and MA 111 at risk due-in part-to livestock grazing. 3. Weeds in the vicinity of the power line and scattered along roads and RU 198.	1. See # 1 above 2. Revise grazing management and design projects to restore riparian function. Develop springs at the head of RU 200 & 201. 3. Coordinate weed treatments with private land owners, utility company, and county.

[1] The scope and scale of forest health, conifer expansion, noxious weeds infestations, and heavy wildfire fuels issues in the STR threatened the biodiversity of the entire landscape. Therefore, the biodiversity standard was not met across the watershed.

Allotment Name Number Category & BLM acres	**Are Healthy Rangelands Standards Being Met?**					**Primary Resource Concerns (including discernable cause of resource concern)**	**ID Team Initial Recommendations**
	Upland	Riparian Wetland	Water Quality	Air Quality	Bio-diversity		
Brandon Pasture #20481 (M) Acres: 652	No	**No**	Yes	Yes	**No[1]**	1. Conifer encroachment in the uplands and riparian areas, forest health (insects and/or disease) and excessive fuels loads 2. Noxious weeds, invasive species, and juniper encroachment are impacting vegetative composition along RU 52 and 113.	1. Prescribed fire, mechanical treatments, timber sales or other means to mitigate conifer encroachment and fuel loads in the uplands and riparian areas. 2. Coordinate weed treatments with private land owners, and county.
Brandon Isolated #10448 (C) Acres: 8	Yes	Yes	Yes	Yes	**No[1]**	1. See # 1 above	1. See # 1 above
Cal Creek # 10507 (M) Acres: 6,170	Yes	**No**	**No**	Yes	**No[1]**	1. See # 1 above 2. Streambank impacts and vegetative composition in riparian habitat along some stream reaches are at risk due-in part-to livestock grazing. 3. Weeds scattered throughout allotment along roads, utility corridors, and historic and current mining sites. 4. Possible impacts to Idaho sedge habitat in pasture # 58, near Grassy Lake. 5. California Creek and Alder Gulch are on the Montana DEQ 303 (d) list of impaired streams.	1. See # 1 above 2. Continue to coordinate weed treatments with private land owners, utility company, and county. 3. Revise grazing management and design projects to restore or improve riparian function in several pastures where streams/ wetlands are FAR↓ or NF. 4. Locate sensitive plant species Idaho sedge in pasture # 58. Mitigate livestock impacts if necessary. 5. Continue working with Montana DEQ and local Watershed Committees in the development and implementation of water quality restoration plans.
Copper Mountain # 10531 # I Acres: 549	Yes	NA	NA	Yes	**No[1]**	1. See # 1 above: Forest Health FAR ↓	1. See # 1 above
Cow Creek # 20446 (C) Acres: 48	No	NA	NA	Yes	**No[1]**	1. See # 1 above 2. Grazing out of season by unauthorized horses impacting upland health.	1. See # 1 above 2. Revise livestock management, increase compliance monitoring, or cancel grazing authorization
Downey Creek # 20581 (M) Acres: 398	Yes	Yes	Yes	Yes	**No[1]**	1. See # 1 above	1. See # 1 above
Dry Lakes # 20526 (C) Acres: 1,146	Yes	Yes	Yes	Yes	**No[1]**	1. See # 1 above	1. See # 1 above
Elser # 20477 (C) Acres: 301	Yes	Yes	Yes	Yes	**No[1]**	1. See # 1 above	1. See # 1 above

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	Upland	Riparian Wetland	Water Quality	Air Quality	Bio-diversity		
Fletcher-Moore # 30428 (I) Acres: 1,721	Yes	**No**	Yes	Yes	**No[1]**	1. Conifer encroachment in the uplands and riparian areas, forest health (insects and/or disease) and excessive fuel loads; Forest Health PFC in previously treated areas but FAR ↓ in untreated. 2. Streambank impacts and vegetative composition in riparian habitat along reach MA110; primarily livestock caused.	1. Prescribed fire, mechanical treatments, timber sales or other means to mitigate conifer encroachment and fuel loads in the uplands and riparian areas. 2. Revise livestock management and /or protect MA 110 from cattle impacts with a fence. 3. Consider intra-allotment land exchange involving public lands surrounded by private for other lands adjacent the NF.
Funk # 10478 (C) Acres: 271	Yes	Yes	**No**	Yes	Yes	1. Indian Creek is on the Montana DEQ 303 (d) list of impaired streams.	1. Continue working with Montana DEQ and local Watershed Committees in the development and implementation of water quality restoration plans.
Georgia Gulch # 20348 (I) Acres: 2,077	Yes	**No**	Yes	Yes	**No[1]**	1. See # 1 above 2. One stream reach, RU 35, FAR ↓; causes-juniper encroachment, weeds, sediment from road.	1. See # 1 above 2. Coordinate weed treatments with private land owners, county and state. 3. Maintenance or improvements on BLM roads to reduce sediment inputs into stream.
Granite Creek # 10468 (M) Acres: 1,655	Yes	NA	Yes	Yes	**No[1]**	1. See # 1 above	1. See # 1 above
Granite-Moore # 10427 (M) Acres: 1,412	Yes	**No**	Yes	Yes	**No[1]**	1. See # 1 above 2. Streambank impacts and vegetative composition in riparian habitat along streams RU 200 and the upper portion of RU 209 are at risk due-in part-to livestock grazing.	1. See # 1 above 2. Revise grazing management and design projects to improve riparian function along RU 200 and 209.
Hillside # 10514 (C) Acres: 282	Yes	NA	Yes	Yes	**No[1]**	1. See # 1 above	1. See # 1 above
Hungry Hollow # 10491 (C) Acres: 2,418	**No**	**No**	Yes	Yes	**No[1]**	1. See # 1 above 2. Streambank impacts and vegetative composition in riparian habitat along reach RU 277; causes are historic mining and sediment from upstream tailings and road.	1. See # 1 above 2. Maintenance or improvements on BLM roads to reduce sediment inputs into stream. 3. Implement weed control program
Lott # 10331 (C) Acres: 389	Yes	NA	Yes	Yes	Yes	No issues identified	Maintain current management

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Allotment Name Number Category & BLM acres	**Are Healthy Rangelands Standards Being Met?**					**Primary Resource Concerns (including discernable cause of resource concern)**	**ID Team Initial Recommendations**
	Upland	Riparian Wetland	Water Quality	Air Quality	Bio-diversity		
McGovern # 00957 (M) Acres: 1,639	Yes	**No**	Yes	Yes	**No[1]**	1. Conifer encroachment in the uplands and riparian areas, forest health (insects and/or disease) and excessive fuel loads 2. Historic placer mining along RU 186 (Brown's Gulch) has changed its potential, impacting vegetative composition, provided niche for heavy knapweed infestations, and exposing stream banks resulting in excessive sediment inputs.	1. Prescribed fire, mechanical treatments, timber sales or other means to mitigate conifer encroachment and fuel loads in the uplands and riparian areas. 2. Coordinate weed treatments with private land owners and Madison County. 3. Maintenance or improvements on BLM roads to reduce sediment inputs into stream
Mill Gulch # 10475 (M) Acres: 531	Yes	Yes	**No**	Yes	**No[1]**	1. See # 1 above 2. Mill Gulch is on the Montana DEQ 303 (d) list of impaired streams.	1. See # 1 above 2. Continue working with Montana DEQ and local Watershed Committees in the development and implementation of water quality restoration plans.
Mill Gulch Isolated # 20450 (C) Acres: 98	Yes	**No**	Yes	Yes	**No[1]**	1. See # 1 above 2. RU 53 FAR ↓; causes, cattle trailing and crossings, sediment, channel over widening, woody species decadence. 3. RU 79 FAR non-apparent trend; causes, channel over widening, trailing, hoof impacts on banks and decadent willows.	1. See # 1 above 2. Revise grazing management and design projects to improve riparian function along lower RU 53 and RU 79.
Miller #20418 (C) Acres: 40	Yes	NA	Yes	Yes	**No[1]**	1. See # 1 above	1. See # 1 above
Ramshorn Creek # 10552 (I) Acres: 2,037	Yes	**No**	**No**	Yes	**No[1]**	1. See # 1 above 2. RU 75 NF; livestock impacts in riparian zone; RU 76 FAR ↓; juniper drying out reach, headcuts, decadent woody species. RU 77 FAR ↓; headcuts, conifer encroachment, livestock trailing 3. Ramshorn Creek and Currant Creek are on the Montana DEQ 303 (d) list of impaired streams.	1. See # 1 above 2. Revise grazing management and design projects to improve riparian function along RU 75, 76, and 77. 3. Continue working with Montana DEQ and local Watershed Committees in the development and implementation of water quality restoration plans.

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Allotment Name Number Category & BLM acres	Are Healthy Rangelands Standards Being Met?					Primary Resource Concerns (including discernable cause of resource concern)	ID Team Initial Recommendations
	Upland	Riparian Wetland	Water Quality	Air Quality	Bio-diversity		
Sand Coulee # 20679 (I) Acres: 590	**No**	**No**	Yes	Yes	**No[1]**	1. Conifer encroachment in the uplands and riparian areas, forest health (insects and/or disease) and excessive fuel loads 2. Uplands FAR non-apparent trend due to increasing juniper and bare ground and decreasing grasses. 3. Stream reach RU 2 FAR ↓; due to heavy sediment inputs from road, juniper encroachment and woody species decadence.	1. Prescribed fire, mechanical treatments, timber sales or other means to mitigate conifer encroachment and fuel loads in the uplands and riparian areas. 2. Replace dysfunctional water tank in upper pasture. 3. Revise grazing system to benefit upland cool season grasses. 4. Road maintenance or improvements to reduce sediment inputs into RU 2
South Daisy # 20399 (M) Acres: 1,382	Yes	Yes	Yes	Yes	**No[1]**	1. See # 1 above	1. See # 1 above
Valley Garden # 10547 (C) Acres: 81	Yes	NA	Yes	Yes	Yes	No issues identified	Maintain current management
Virginia City Hill # 10521 (M) Acres: 2,470	Yes	**No**	Yes	Yes	**No[1]**	1. See # 1 above 2. RU 199 (upper Slade Creek) FAR ↓; due to sediment inputs, loss of deciduous woody species, juniper encroachment and bank disturbances from livestock	1. See # 1 above 2. Revise grazing management and design projects to improve riparian function along RU 199
Wisconsin Creek # 10501 (I) Acres: 1,381	Yes	**No**	Yes	Yes	**No[1]**	1. See # 1 above Forest Health FAR ↓ 2. RU 135 FAR non-apparent trend, at risk from juniper encroachment.	1. See # 1 above 2. Reconstruct dysfunctional water development on spring above RU 135.
Wisconsin Creek Isolated # 10523 (C) Acres: 40	Yes	NA	Yes	Yes	Yes	No issues identified	Maintain current management

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Scope and Scale

The issue of scale must be kept in mind in evaluating each standard. It is recognized that isolated sites within a landscape may not be meeting the standards; however, considering broader scope and scale, the area may be in proper functioning condition. No single indicator provides sufficient information to determine rangeland health. They are used in combination to provide information necessary to determine land health.

Standard # 1: Upland Health

Four allotments are **not** meeting this standard:
1. Brandon Pasture
2. Cow Creek
3. Hungry Hollow
4. Sand Coulee

Extensive populations of dalmation toadflax and spotted knapweed are scattered throughout the Brandon Pasture allotment. Large infestations of spotted knapweed are also prevalent in some upland locations in the Hungry Hollow Allotment. Some soil erosion is occurring on upland areas in these allotments. Soil erosion is also a concern in the uplands of the Sand Coulee allotment. Shifts in vegetation composition from preferred herbaceous species to less desirable species, indicative of sustained spring and early summer livestock use, is evident in some upland areas in Sand Coulee. Livestock impacts have been determined to be one of the contributing factors in not meeting the upland standard in Sand Coulee allotment. Non-compliance to the terms and conditions stipulated in the grazing lease is a factor in the poor condition of the uplands in the Cow Creek allotment.

Standard # 2: Riparian Health

Thirteen allotments are **not** meeting this standard:
1. Benchmark
2. Brandon Pasture
3. Cal-Creek
4. Fletcher-Moore
5. Georgia Gulch
6. Granite-Moore
7. Hungry Hollow
8. McGovern
9. Mill Gulch Isolated
10. Ramshorn Creek
11. Sand Coulee
12. Virginia City Hill
13. Wisconsin Creek

The riparian areas that did not meet the standards were determined to be FAR with either a static or downward trend or non-functional. Riparian habitat that is FAR with an upward trend is considered to be meeting the riparian health standard because it is making progress toward the goal of PFC.

Six allotments failed to meet the riparian standard due to causes other than current authorized livestock grazing. These allotments are Brandon Pasture, Hungry Hollow, McGovern, Georgia Gulch, Sand Coulee, and Wisconsin Creek. Generally, the riparian areas in these allotments did not meet the standard because of some or all of the

following reasons: noxious weeds and/or invasive species (cheatgrass), conifer encroachment, sediment inputs from roads and/or uplands and riparian woody plant decadence.

Seven allotments failed to meet the riparian standard in part because of authorized livestock grazing. These allotments are Benchmark, Cal-Creek, Fletcher-Moore, Granite-Moore, Mill Gulch Isolated, Ramshorn Creek and Virginia City Hill. Generally, livestock trailing and/or grazing has contributed to altered vegetative composition and/or reduced bank stability within the riparian zones in these allotments.

Wild ungulate browsing by moose and elk are also contributing to the degraded condition and vigor of the woody shrubs and tree species in many of these riparian habitats.

Standard # 3: Water Quality

Eight streams within the South Tobacco Roots Watershed have been listed on the State DEQ's 303(d) list of water quality impaired streams. Six of these streams run through public land in 5 allotments in the STR. The streams are; Alder Gulch, California Creek, Ramshorn Creek, Currant Creek, Indian Creek, and Mill Gulch. Consequently, the following 5 allotments are **not** meeting the water quality standard:

1. Cal-Creek
2. Ballard*
3. Funk*
4. Mill Creek*
5. Ramshorn Creek

* Streams running through these allotments are on DEQ's 303(d) list of impaired streams. However, on the public lands portion of the allotments, BLM authorized activities are not contributing to the streams impairment status.

Grazing in the riparian zones is one of the identified sources of impairment on all eight of the streams on the 303(d) list in the STR (see Table 6 in the Assessment Report). Based on the IDT's riparian functionality calls on specific stream reaches in the Cal-Creek and Ramshorn Creek allotments, BLM authorized grazing may be contributing to water quality impairment in Alder Gulch and Ramshorn Creek. However, since changes will be initiated to improve riparian and upland health wherever the standard was not met, water quality will also be improved.

Standard # 4: Air Quality

All the allotments assessed within the watershed are meeting this standard.

Standard # 5: Biodiversity

Because of wide spread noxious weed infestations, forest health issues and excessive fuels for potential wildfire the standard for biodiversity is **not** being met on 26 of 30 grazing allotments in the watershed.

The plant composition in riparian and upland habitats is changing as the result of ecological succession. The long but persistent progression from early seral stage plant communities towards climax plant communities is inevitable. The spread of primarily Douglas-fir and Rocky Mountain juniper into sagebrush grasslands and riparian habitats is attributable, in part, to the reduced frequency and suppression of wildfire. This ecological process is affecting changes in dominant plant communities on a landscape scale, which in turn reduces the complexity of vegetation habitat types and dependent wildlife species.

Wide spread noxious weed infestations are also present throughout the STR assessment area. Historic mining activity has created significant disturbances providing an opportunity for noxious weeds to establish, thrive and expand.

Although the biodiversity standard is not met on the watershed scale, there are many areas of public land within allotments, and in the 1200 un-allotted acres in the Ruby Mountain WSA, meeting the standard and providing excellent habitat for a broad and diverse array of wildlife.

Four allotments, and the un-allotted acres in the WSA, **are meeting** the biodiversity standard:

1. Funk
2. Lott
3. Valley Garden
4. Wisconsin Creek Isolated

NEPA Documentation

Before any of the above stated recommendations can be implemented, NEPA documentation will be completed to analyze a reasonable range of alternatives to address resource concerns found during the Assessment. The Dillon Field Office will be working on the South Tobacco Roots Watershed Environmental Assessment (MT-050-06-11) during the winter and spring of 2007.

Implementation of new plans will begin in 2007, but due to budgetary and human resource constraints, complete implementation of these plans may take several years.

For more information, please review the South Tobacco Roots Assessment Report or contact the Dillon Field Office (406) 683-8000.

Authorized Officer's Determination

Based on my review of the Assessment Team's recommendations and other relevant data and information, I have determined that the following 4 allotments within the South Tobacco Roots Watershed **meet** all five of the Standards for Rangeland (Land) Health and Guidelines for Grazing Management for BLM lands in Montana:

1. Funk*
2. Lott
3. Valley Garden
4. Wisconsin Creek Isolated

* Indian Creek, which is on the DEQ 303(d) list of impaired streams, runs through the Funk allotment. However, on the public lands portion of the allotment BLM authorized activities are not contributing to the streams impairment status.

I have determined that the following 12 allotments **meet** four of the Standards for Rangeland Health and Guidelines for Grazing Management for BLM lands in Montana (exception, the biodiversity standard).

1. Baker Summit
2. Ballard*
3. Brandon Isolated
4. Copper Mountain
5. Downey Creek
6. Dry Lakes
7. Elser
3. Granite Creek
9. Hillside
10. Mill Gulch*
11. Miller
12. South Daisy

* Mill Gulch creek, which is on the DEQ 303(d) list of impaired streams, runs through the Ballard and Mill Gulch allotments. However, on the public lands portion of the allotments, BLM authorized activities are not contributing to the streams impairment status.

I have determined that the following 14 allotments **do not** meet the Standards for Rangeland Health and Guidelines for Grazing Management for BLM lands in Montana. These allotments do not meet the Uplands and/or Riparian Health Standard.

1. Benchmark
2. Brandon Pasture
3. Cal-Creek
4. Cow Creek
5. Fletcher-Moore
6. Georgia Gulch
7. Granite-Moore
8. Hungry Hollow
9. McGovern
10. Mill Gulch Isolated

11. Ramshorn Creek
12. Sand Coulee
13. Virginia City Hill
14. Wisconsin Creek

I have determined that current livestock management is a significant causal factor in the land health standards **not being met** on each of the following 9 allotments.

1. Benchmark
2. Cal-Creek
3. Cow Creek
4. Fletcher-Moore
5. Granite-Moore
6. Mill Gulch Isolated
7. Ramshorn Creek
8. Sand Coulee
9. Virginia City Hill

Pursuant to 43 CFR 4180.2(c), the Authorized Officer shall take appropriate action as soon as practicable but not later than the start of the next grazing year upon determining that existing grazing management practices or levels of grazing use on public lands are significant factors in failing to achieve the standards. Appropriate action means implementing actions that will result in significant progress toward fulfillment of the standards. Practices and activities subject to standards and guidelines include the development, modification, or revision of AMPs, establishment of terms and conditions of permits, leases and other grazing authorizations, and range improvement activities such as vegetation manipulation, fence construction and development of water.

BLM Manual Handbook H-4180-1, Rangeland Health Standards Handbook, provides guidance for conducting watershed-based Land Health Assessments. It states "If the Land Health Standards are not being achieved because of a causal factor other than current livestock grazing management, you must consult other program guidance for the appropriate steps to be taken to ensure that progress toward meeting Standards is made."

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Dillon Field Manager Date